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vessels received bills of health, only 1 of which, however, carried passengers. The steamship *Spartan Prince*, of the Prince Line, sailed on June 16 for New York via Naples; 7 cabin and 44 steerage passengers and 47 pieces of baggage were inspected and passed. There was no freight from infected places.

Respectfully,

RUPERT BLUE,

*Passed Assistant Surgeon, U. S. M. H. S.*

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.*

*The tuberculosis congress at Naples.*

NAPLES, ITALY, June 2, 1900.

SIR: I have the honor to submit the following report, in connection with my detail as delegate on the part of the Department of State to represent the United States at the international congress on tuberculosis which was held in Naples, Italy, from April 25-28, 1900:

Every country in Europe was represented, except England and Turkey. Japan also sent a delegate.

The congress, which was under the patronage of the Queen of Italy, was formally opened at the San Carlo theater in the presence of the King, Queen, and Prince and Princess of Naples and 3,000 people.

The opening address was made by the minister of public instruction, the Hon. Guido Baccelli, who was also the honorary president of the congress. Short addresses were made by the delegates from each country, after which they were presented to their majesties the King and Queen.

Many noted men were in attendance. With the exception of Italy, Germany was probably best represented. The venerable Virchow received an ovation wherever he appeared. The congress was often referred to as the continuation of the tubercle congress held in Berlin last year.

The work of the congress was divided into 4 sections, viz, etiological and prophylactical, pathological and clinical, therapeutical, and sanitary.

The section on etiology was opened by a paper by the president, Professor De Giovanni. He dwelt upon the importance of national legislation to assist in the suppression of the disease.

Sanarelli read a paper entitled "The prophylaxis of tuberculosis on the railways."

He presented the following conclusions which were adopted by the congress:

1. It is necessary that the sanitary service should adopt and cause to be observed regulations capable of guaranteeing the public against the danger of infectious diseases, especially against the contagion of tuberculosis in railway coaches.

2. These regulations should consequently include tuberculosis among the diseases for which it is obligatory to disinfect coaches which have been used in the transportation of infectious patients.

3. The railway administration is requested to cause to be posted up in all waiting rooms and stations and in all passenger coaches notices forbidding expectoration except in cuspidors.

4. The stations and the greater number of sleeping-car compartments should be furnished with cuspidors to contain a liquid. These cuspidors should be of a sort easily cleaned and disinfected. In some of these

compartments smoking should be prohibited. In others which are not furnished with cuspidors smoking and spitting on the floor should be prohibited under penalty of a fine.

5. The railway companies are requested to apply an efficacious system of ventilation to all passenger coaches.

6. Woolen carpets should be replaced by floor coverings of linoleum or oilcloth, which can be easily cleaned with sponge or broom.

7. Wooden floors of the third-class should be even, uniform, and waterproof, so that they may be washed daily with the hose.

8. Fabrics used for coverings of seats and for curtains should be replaced by waterproof materials easily cleaned with water and incapable of holding dust.

9. The construction and internal arrangement of the coaches should be such as to insure the efficacy of daily cleaning.

10. Where the old system of heating by means of footstoves is still in use it should be replaced as soon as possible by steam heating.

Sanarelli called attention to the fact that Garofalo, medico capo della Società degli Omnibus e Tramways di Roma, had nominated a commission on April 11, 1900, which was to make a thorough investigation as to the best methods to adopt in railway sanitation.

Sanarelli stated that the tubercle bacilli were much more numerous in the third-class railway cars than in the first-class.

D'Arrigo demonstrated a new method of staining the tubercle bacillus, which was as follows:

*New method of staining the tubercle bacillus—D'Arrigo.*

1. Make a saturated solution—say, 1 per cent—of basic fuchsin in carbolized water at 5 per cent; increase the proportion of fuchsin and mix with 10 per cent of alcohol which should be in the form of the ordinary Ziehl solution.

2. Stain the section in the incubator, putting the watch glass on a plate of paraffin; expose to a heat of 50 C. and leave for half an hour if it is desired to color only the bacilli. Expose for fifty minutes if it is desired to color the spores. The last treatment should be made by the common Ziehl-Gabbett method.

The author states that results obtained were most satisfactory, the method being much more certain than the methods heretofore used.

The pathological and clinical sections met for the first time in the afternoon of April 26, with Professor Maragliano in the chair.

Petrusky read a paper in which he emphasized the importance of the tuberculin test for early diagnosis.

Senator gave the twelve following prints as the most useful in the diagnosis of initial tuberculosis:

*Diagnosis of initial tuberculosis—Senator.*

1. Search for the bacillus. Its presence, however, can be proved only in advanced cases.

2. Inoculation in experiment animals.

3. Serum reaction.

4. Injection of tuberculin. But this, like the preceding diagnostic method, gives the localization of the tubercular process only in rare cases.

5. Leucocytosis, when it is possible to eliminate all other affections in which it may be verified.

6. Auscultation, when modifications appear in the pulmonary apices, because after localized catarrh of the apex phthisis shows itself as a rule.

7. Difference in the expansibility of the apices.

8. Provoking artificial catarrh by the use of iodide of potassium.

9. Tubercular lesions of other organs.

10. Presence of progressive pleuritis.

11. Phthisic habit.

12. Cough, sweat.

De Renzi and Boeri gave the result of their experiments with the sweat of tuberculous and healthy individuals. They stated that they could not agree with Salter (*The Lancet*, 1898) that the sweat of tuberculous subjects contained tuberculin.

The only difference they found between the healthy and the diseased individuals, was that the sweat of the tubercular subjects was increased in toxicity, otherwise the reaction was the same when injected into tuberculous cavities.

Posner stated that of 1,300 necropsies made in the laboratory of Virchow, it was found that tuberculosis of the genito-urinary tract was not so rare as commonly supposed. Five per cent were found to be afflicted and 30 per cent of those afflicted with tuberculosis were found to have an involvement of the genito-urinary tract.

The section on therapeutics was opened on the afternoon of April 27, with Professor De Renzi in the chair.

There were numerous new methods of curing tuberculosis discussed but none of them were supported by any number of cases.

Peunieres stated that he had obtained very good results by the injection of 1-2 cubic centimeters of euphorbia pilulifera. It should be injected into the skin of the chest nearest the lesion. The injections are made weekly for many months. He believes euphorbia pilulifera to be a stimulant to glandular action and it is in this way that it works a beneficial effect on the lesion.

The section on sanitation met on the morning of April 28.

The importance of the sanatorium treatment was fully discussed. Professor Rubino dwelt upon the great necessity of having 2 kinds of sanatoriums—those for receiving the hopeless cases and those in which a cure may reasonably be expected. Toward the latter part of the afternoon session the honorary president of the congress, the honorable Baccelli, took the chair. In a few well-chosen words he thanked the foreign governments for sending delegates, and especially for sending so many illustrious delegates. He thereupon declared the congress closed.

Respectfully,

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.*

VICTOR G. HEISER,  
*Assistant Surgeon, U. S. M. H. S.*

MAY 31, 1900.

SIR: On April 20, in accordance with a cablegram received from Washington, the American minister at Vienna notified me of my appointment as delegate and representative of the United States to the congress against tuberculosis, to be held at Naples April 23-28. I expressed to him at the time, and take this opportunity of doing so now directly to the State Department, my appreciation of the distinguished honor and privilege accorded me. Starting immediately, on April 21, I arrived in Naples on the 23d instant, and there learned that

the congress would not open its session before April 25. I met at this time Dr. Heiser, also appointed by you as delegate of the United States.

During the following two days before the congress representatives arrived from all the European nations with the exception of England until the morning of the 25th instant when upward of 1,000 official and voluntary delegates were present. This number included many of the most noted pathologists and clinicians of Europe, among whom may be mentioned Professors Virchow, Senator Löffler, Fraenkel, Pfeiffer, Gerhardt, Ewald, Riebner, and Posner, from Germany; Professors Lannelongue, Landorezy, Corennot, Peunieres, Collet and Ausset, from France; Professors Blennenthal and Dubelir from Russia; and many others from the smaller countries. Italy was represented by her foremost medical men, the delegation being headed by the minister of education, and chief of the first clinic in Rome, Prof. Guido Bacelli. On the morning of April 25 the congress was formally opened in the San Carlo theater by Minister Bacelli, in the presence of the King and Queen of Italy, the Prince and Princess of Naples, and the members of the court. At this time, in turn with the delegates of the different governments, your representative was called upon and responded for the United States, addressing the assembled body in a short statement of the advances already made and now under way in America in the control of the progress of tuberculosis. Orations were delivered by Minister Bacelli for the Government of Italy, and by the burgomaster of Naples for the municipality, welcoming the delegates from foreign countries. Following the exercises the representatives of the various governments were informally received by the King and Queen, both of whom took the opportunity of expressing their cordial interest in their "sister country, America."

The congress against tuberculosis opened its first formal meeting on the afternoon of April 25, and from that time until the evening of April 29 held constant session in the Palazzo Madalonni, Naples. All transactions were carried on in Italian, the official language of the congress, and in spite of this hindrance to discussion, the work evinced a deep thoughtfulness and an unflinching interest in the solution of a perplexing and dangerous problem. The congress was divided into 4 main sections, as follows: I, Etiology and prophylaxis; II, Pathology and diagnosis; III, Therapy, and IV, Sanitation. Sessions were held morning and afternoon, covering the greater part of four days (April 25, 26, 27, and 28). Many papers were presented of great interest and value; some as practical reports from institutions (Heilstättene, etc.), others as outlines of prospective methods of treatment of tubercular patients. In most instances the subjects were handled by prominent men who had made a special study of this important branch of medical work. The following points were emphasized and freely discussed during the course of the proceedings:

#### I--ETIOLOGY AND PROPHYLAXIS.

##### *The effect of climate upon tuberculosis.*

Professor Lannelongue (Paris) concluded in his excellent paper that the more limited outspread of tuberculosis in certain regions explains itself by the mode of living of the inhabitants and usually by a less thickly populated nature of the place. To demonstrate the fact that the climate has less to do with the betterment of the patients' condition than the dietetic and physical supervision, he reported the injection of tuberculous matter in the pleura of a large number of guinea pigs, then

dispatching them to different climatic sections of France, where, however, the same rules of living were prescribed for all. In the first series, stretching over eleven months, 150 male animals were injected, and 3 divisions of 50 each sent to different localities. One division of 50 was sent to the seacoast, another to the country near Valmont, while a third was retained in the laboratory in Paris. Those on the seacoast perished only less promptly than the 50 retained in the country, while the division in the laboratory survived decided by the longest time. A second and similar experiment was instituted and resulted in the same manner, although with a less marked difference between the 3 groups. "This striking result," said Lannelongue, "was probably due to the constancy of the temperature of the laboratory. The variations in warmth were more marked in the country; and in the cooler periods the number of deaths increased extraordinarily, both at the seaside and in the country.

*Classification as an infectious disease.*

Professor Dubelir (Moscow) suggested that "in accordance with the present view of phthisis and in behalf of statistical unity it were rational in official reports to cross tuberculosis from the list of diseases of the organs of respiration and to transfer it to the list of infectious diseases."

*Examination of cattle—Value of sterilizing of milk.*

Dr. Marcone (Naples) reemphasized the necessity of an official examination of all cattle by means of tuberculin, in order to exclude the transmission of the infection through milk food. He had found 25 per cent of the cattle in Naples to be tuberculous. Jauma, in the same connection, stated that he had nourished guinea pigs with milk to which he had added tubercle bacilli. He had then first boiled the milk at 100° C. for twenty-five minutes. Notwithstanding the boiling of the milk these animals all died with the lesions of tuberculosis, while control animals nourished with the same milk not infected with the bacilli remained unaffected. He advised the prevention of the use of milk even when boiled, originating from cattle that react to the tuberculin test.

*Prophylaxis in railroads against tuberculosis.*

Professor Sanarelli (Boulogne) closed the work of the section by proposing 10 rules of precaution for use in the railway systems. Among these the following were of practical interest:

Carriages in which tubercular subjects ride should be subject to the same requirements for disinfection that obtain in the case of other infectious diseases.

In waiting rooms, on stairways, and in every railway carriage and compartment, should be posted conspicuous signs, forbidding expectorating, except in the receptacles provided for the purpose.

At all stations and in all trains cuspidors should be provided and filled with fluid. These should be easily cleansed and disinfected. Carriages and apartments for nonsmokers should be supplied.

Linoleum should be used for covering the walls and floors of trains, as well as washable rubber substances for the seats and curtains.

Steam heating should be introduced.

## II.—PATHOLOGY AND DIAGNOSIS.

*Source of hereditary infection.*

Professor Arrigo (Naples) claimed to have demonstrated experimentally the fact that tuberculosis, in the great majority of cases, occurs through infection of the placenta. In tubercular animals he had found microscopically the bacilli in the placenta and also in the foetal organs.

*Thermogenication of tubercle bacilli.*

Professor Guiffre (Palermo) related the results of experiments in regard to the origin of the fever in phthisis. He found that the tubercle bacillus is a thermogenic microorganism, and that in one liter of glycerin culture it develops at 37° C. approximately three-tenths of one caloric of heat. Without disputing the influence of the nervous system upon the heat production, he saw good ground for a rise in the temperature of the patient, also in this biologic action of the bacillus.

*Conditions of use in forming an early diagnosis.*

Professor Bozzalo (Ionio) called attention to the following conditions often or usually presented in tuberculosis, that are of assistance in the formation of the earliest possible diagnosis:

1. Albuminuria, alternating with phosphaturia.
2. A tubercular pseudochlorosis, distinguishing itself from the true condition through a slighter decrease in the hemoglobin, as well as through less marked alterations in the circulatory system.
3. Disturbances of digestion, anorexia, nausea, vomiting, gastrolgia.
4. Tachycardia without fever.
5. Alteration in the blood pressure (diminution).
6. Rise of temperature following bodily and psychic effort in women a rise of from three-tenth to four-tenth degree before the appearance of the menses.
7. Sweating; not only the night sweats, but such as occur after bodily or psychic exertions.
8. Pain in the neck in the supraorbital regions, etc.
9. Dissimilarity of the pupils; occasional dilation of both pupils.
10. Appearance of herpes zoster.
11. Splenic enlargement.

*Influence of concurrent diseases upon tuberculosis.*

Professor Fazio (Naples) had investigated the influence of concurrent diseases upon phthisis. Only heart lesions (and especially mitral insufficiency) and emphysema pulmonum appear actually to afford a protection against tuberculosis.

*Special poison of tuberculosis.*

Professor Boccardi (Naples) made the following report on the pathologic and anatomic findings following the injection with the specific tuberculosis poison:

1. The poisonous substance, isolated by Professor De Giaksa, belongs according to its chemical properties to the true nucleus. Its reaction was tested by injections into the subcutaneous tissue, the pleural and abdominal cavities, the veins, and the trachea.

2. In relatively large doses injected intravenously the substance caused thrombi in the right heart and in the pulmonary artery and its branches. The animals experimented upon died promptly of asphyxia, usually complicated by bulbar paralysis, caused by thrombosis of the vessels of the spinal cord.

3. In small doses the intravenous injection caused capillary thrombosis, as a rule in the liver, occasionally in the pulmonary vessels. Where infarcts were absent, scattered areas of catarrhal pneumonia were noted. In the neighborhood of the infarcts were found in large numbers leucocytes and giant cells. In the liver were necrotic areas and fatty degeneration, as well as in the kidneys.

4. One could obtain the (illegible) changes through subcutaneous and intraperitoneal injection. At the point of insertion there developed nodules with leucocytic infiltration, degenerating into a true cheesy necrosis. Frequently the latter became fibrous in character. The neighboring lymph glands were swollen.

5. The smallest intra-tracheal injections produced areas of catarrhal pneumonia in great numbers. In the alveoli were giant cells and many wandering cells. Also were noted frequently peribronchial and perivascular nodules, histologically resembling the tubercle.

6. In view of these facts Professor Boccardi concluded that the substance isolated by Professor De Giaxa is the active, and perhaps the specific, poison of the tubercle bacilli, since the animals treated with the poison invariably react to tuberculin.

### III AND IV.—THERAPY AND SANITATION.

Professor de Renzi (Naples) from the chair referred to the Maragliano-serum as able "in light cases to work an improvement so that the patients no longer react to tuberculin—a proof that they have regained a remarkable resisting power to the specific tubercular poison." He stated further that "according to unanimous opinion the means of cure of tuberculosis are pure air, over-feeding, rest and light." He closed his address with a description of the "light clinic" in Naples, which (for light therapy) is arranged as an 8-cornered room, 120 inches diameter, 14 inches height. The walls are clad with mirrors and the ceiling as well. In addition are electric lights up to 1,871 candlepower. Professor de Renze believes also that "through the severe sweating created by this treatment, favorable results are obtained through elimination of toxins."

Professor Ewald (Berlin) reported 16 per cent of cures among 25 cases by the use of Hetol injections. Formaldehyd inhalations and injections were also generally recommended as useful in isolated cases.

#### *The polyclinic for tuberculosis.*

Prof. B. Fränkel (Berlin) called especial attention to the establishment of a system of polyclinics for the special diagnosis and treatment of tuberculosis in sections where the Heilstätten are either inaccessible or do not exist. In Berlin and Bonn such polyclinics have already been established, and in the former since November, 1899, over 1,700 patients have been examined and a diagnosis rendered. Sputum is examined free of charge, and patients sent by physicians are returned to them with a printed form filled out with the findings of experienced men in the case. Patients suspecting their own condition are freely examined and instructed as to a proper course of action in regard to prevention of the disease or treatment when the infection is already present. Pro-



fessor Frankel spoke of the polyclinic system as the right arm of the Heilstätten, and expects to see it extended over the whole of Germany.

The general sentiment of the speakers was one of marked approval of the open-air treatment, with a judicial use of medicaments, most important among which still remain creosote and potassium iodid. The results of treatment in the Heilstätten are universally favorable in cases where the diagnosis is made early. A cure is often obtained; improvement is invariable.

Professor Lannelongue expressed the gratification of all the participants in the congress, for the courteous treatment at the hands of the Italian Government, and Minister of Education Baccelli then closed the congress with an expression of gratification to the various Governments for their sympathy and assistance in inaugurating a contest for the control of tuberculosis.

In reviewing the work and results of the congress at Naples, it can not be said that anyone striking advance was reported, either in our knowledge of the nature of the disease or in the form of cure. What progress has been recorded, has been in the line of prophylaxis, of a recognition of the necessity of an early, accurate diagnosis, and of a grasping of the fact that certain cases of tuberculosis can be permanently cured by placing them under proper hygienic surroundings. Still more striking were the reports of efforts being made throughout Europe to educate the masses into a knowledge of the infectious nature of tuberculosis and to promulgate laws compelling the report of cases when diagnosed; isolation of such cases is then demanded, either for treatment if possible, and for simple exclusion from the world at large when only a source of danger to others. In short, the spirit of the congress culminated in the statement of Minister Baccelli that "Infection through the air, and through food is to be considered of less significance than constant danger existing for others in those already afflicted with tuberculosis. The cure of the disease then is a problem of education that must be solved by governmental laws."

The Italian Government and those in charge of the management of the congress took great pains in their attention to the pleasure and comfort of the delegates. Excursions were arranged, and special privileges at the opera were accorded. On the closing night (April 28) a dinner was given by the King and Queen of Italy in their Palazzo de Reale to the special representatives of the various governments. Following the dinner the delegates were again informally received by the royal pair and the court.

In submitting this report to the State Department, your representative wishes again to express his sense of the high honor and trust confided in him, and his hopes that not the report but the course of action throughout may meet with your unqualified approval. The necessity of a sudden departure, and on short notice, prevented any active participation on his part, so far as a written contribution was concerned. Whenever possible your delegates showed themselves interested for the country in all the proceedings, and endeavored to inspire the confidence that when the time comes for the United States to help in what is now a discouraging inactivity in our progress against tuberculosis, it will occupy no back position in the ranks of the nations.

In the hope that the report will meet with your esteemed approval, and be of practical service in placing the work of the congress at Naples before the medical and general public, I remain.

Respectfully,

ROBERT N. WILLSON, Jr.

Hon. SECRETARY OF STATE.